UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Box 1850 Alexandria, Virginia 22313-1450 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,258	12/31/2003	Michael K. Eschmann	ITL.1082US (P18346)	7473
21906 TROP PRUNEF	7590 04/18/2007 R & HU. PC		EXAMINER	
, 1616 S. VOSS I	ROAD, SUITE 750		SCHLIE, PAUL W	
HOUSTON, TX	X 7/057-2631		ART UNIT	PAPER NUMBER
			2186	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/18/2007	PAPER	

# Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

1)⊠ Responsive to communication(s) filled on 3 November 2006.  2a)☑ This action is FINAL. 2b)☐ This action is non-final.  3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4)☑ Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5)☐ Claim(s) is/are allowed.  6)☑ Claim(s) is/are objected to.  8)☐ Claim(s) is/are objected to.  8)☐ Claim(s) are subject to restriction and/or election requirement.  Application Papers  9)☐ The specification is objected to by the Examiner.  10)☑ The drawing(s) filled on 31 December 2003 is/are: a)☑ accepted or b)☐ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a)☐ All b)☐ Some * c)☐ None of:  1.☐ Certified copies of the priority documents have been received.  2.☐ Certified copies of the priority documents have been received in Application No  3.☐ Copies of the certified copies of the priority documents have been received in his National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	·	Application No.	Applicant(s)				
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Estensions of arm may be available used the provision of 37 CFR 11-300, in no event, however, may serely be timely filed after \$40.00 to mayb 1 appecified above, the maintain ablationy peaced will apply and will expire SIX (6) MONTHS from the mailing date of this communication.  Failurs to reply which the sof o exceeded pend for reply will, by statuke, cause the application to score abstance (5) 61 U.S. C. § 135).  Any reply received by the Office lear than time moints after the mailing date of this communication, even if timely filed, may reduce ally searned plant time disjustems. Set 27 CFR 1.74(4).  Status  1) □ Responsive to communication(s) filled on 3 November 2005.  2a) □ This action is FINAL.  2b) □ This action is non-final.  3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) □ Claim(s) 1-32 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) □ Claim(s) is/are allowed.  6) □ Claim(s) is/are allowed.  6) □ Claim(s) is/are objected to by the Examiner.  7) □ The drawing(s) filed on 31 December 2003 is/are: a) □ accepted or b) □ objected to by the Examiner.  Application Papers  9) □ The specification is objected to by the Examiner.  10) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.		10/751,258	ESCHMANN ET AL.				
Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Exeminos of time may be available under the provision of 37 CFR 11360, in no event, however, may a reply be timely filled after 51X (6) MONTHS from the mailing date of this communication. If NO period for may is a specified with one, the maintain station predict will apply and will apply 30X (6) MONTHS from the mailing date of this communication. If NO period for may is a specified with one, the maintain attent predict will apply and will apply 30X (6) MONTHS from the mailing date of this communication. Any reply received by the Office liter than three months after the malling date of this communication, seven if timely filled, may reduce any searned patent term adjustment. See 37 CFR 1.704(b).  Status  1) Responsive to communication(s) filled on 3 November 2006 2a) This action is FINAL.  2b) This action is final.  3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s) 1.30 is/are pending in the application.  5) Claim(s) is/ag is/are rejected.  7) Claim(s) is/are allowed.  6) Claim(s) is/are allowed.  6) Claim(s) is/are objected to.  8) Claim(s) is/are as subject to restriction and/or election requirement.  Application Papers  9) The specification is objected to by the Examiner.  10) The drawing(s) filled on 31 December 2003 is/are: a) accepted or b) Disjected to by the Examiner.  Application Papers  9) The provided the provided the provided to by the Examiner.  Application Papers  10 And the drawing(s) filed on 31 December 2003 is/are: a) accepted or b) Disjected to by the Examiner.  Application Papers  11 December 2003 is/are: a) Cache and the provided to be a provided to b	Office Action Summary	Examiner	Art Unit				
Period for Reply  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Extensions of time may be available under the provisions of 37 CFR 1.136(s). In or event, however, may a reply be timely filed after 316, 96 with via specified above, the maximum statutory period will apply and will easing \$1.00 MUNITS from the mailing date of this communication.  False to reply within the set or extended price for reply will, by statute, cause the application to become ABANDONED (3) U.S.C § 133). Any reply received by the Office above, the maximum after the mailing date of this communication, even if timely filed, may reduce any accordance with the practice under Exparte Quayle, 1935 C.D. 11, 453 O.G. 213.  Status  1) □ Responsive to communication(s) filed on 3 November 2005.  2a) □ This action is FINAL. 2b) □ This action is non-final.  3) □ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Exparte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) □ Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) □ Claim(s) 1-30 is/are allowed.  6) □ Claim(s) 1-30 is/are ejected.  7) □ Claim(s) 1-30 is/are ejected to by the Examiner.  9) □ The specification is objected to by the Examiner.  10) □ The drawing(s) filed on 31 December 2003 is/are: a) □ accepted or b) □ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.35(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).							
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.  Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a exply be timely filled  If NO princip to regive is specified above, the maximum statutory period will apply and will expire SIX (8) MONTHS from the maining date of this communication.  Failur for regive is specified above, the maximum statutory period will apply and will expire SIX (8) MONTHS from the maining date of this communication.  Failur for regive within the act or standard period for regive in by which the set or standard period for regive in the magnitum than adjustment. Set 37 CFR 1.704(b).  Failur for regive within the act or standard period for regive in the maximum statutory period will apply and will expire SIX (8) MONTHS from the maining date of this communication.  Failur for regive within the set or standard period for regive in the provision of the communication.  Failur for regive with the set of the communication.  Status  1) Responsive to communication(s) filled on 3 November 2005.  2a) This action is FINAL.  2b) This action is non-final.  3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s)		ears on the cover sheet with	the correspondence address				
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMONICATION.  Ederations of time may be available under the provisions of 37 CFR 1.13(e). In no event, however, may reply be timely filed of the SX (8) MONITS from the mailing date of this communication.  Failus to reply with the six or exceedable prior to reply will, by stank, cause the applicate to become ARMONIED (5s U.S. c. § 133). Any reply received by the Office later has three monits after the mailing date of this communication, even if timely filed, may reduce any seared patient is magdiument. See 37 CFR 1.704(b).  Status  1) Responsive to communication(s) filed on 3 November 2006.  2a) This action is FINAL.  2b) This action is non-final.  3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s) is/are allowed.  5) Claim(s) 1-30 is/are allowed.  6) Claim(s) 1-30 is/are rejected.  7) Claim(s) is/are objected to.  8) Claim(s) 1-30 is/are rejected to.  8) Claim(s) 1-30 is/are rejected to.  8) Claim(s) 1-30 is/are rejected to.  7) The drawing(s) filed on 31 December 2003 is/are: a) accepted or b) objected to by the Examiner.  Application Papers  9) The specification is objected to by the Examiner.  10) The drawing(s) filed on 31 December 2003 is/are: a) cacepted or b) objected to See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some *c) None of:  1. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the pr			WITH(C) OR THIRTY (20) DAVE				
1)⊠ Responsive to communication(s) filled on 3 November 2006.  2a)☑ This action is FINAL. 2b)☐ This action is non-final.  3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4)☑ Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5)☐ Claim(s) is/are allowed.  6)☑ Claim(s) is/are objected to.  8)☐ Claim(s) is/are objected to.  8)☐ Claim(s) are subject to restriction and/or election requirement.  Application Papers  9)☐ The specification is objected to by the Examiner.  10)☑ The drawing(s) filled on 31 December 2003 is/are: a)☑ accepted or b)☐ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a)☐ All b)☐ Some * c)☐ None of:  1.☐ Certified copies of the priority documents have been received.  2.☐ Certified copies of the priority documents have been received in Application No  3.☐ Copies of the certified copies of the priority documents have been received in his National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	<ul> <li>WHICHEVER IS LONGER, FROM THE MAILING DA</li> <li>Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication.</li> <li>If NO period for reply is specified above, the maximum statutory period v</li> <li>Failure to reply within the set or extended period for reply will, by statute. Any reply received by the Office later than three months after the mailing</li> </ul>	ATE OF THIS COMMUNIC, 36(a). In no event, however, may a reposite apply and will expire SIX (6) MONT cause the application to become ABA	A LION.  bly be timely filed  HS from the mailing date of this communication.  NDONED (35 U.S.C. § 133).				
2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.  3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) ☐ Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) ☐ Claim(s) is/are allowed.  6] ☐ Claim(s) is/are rejected.  7) ☐ Claim(s) is/are objected to.  8) ☐ Claim(s) is/are subject to restriction and/or election requirement.  Application Papers  9) ☐ The specification is objected to by the Examiner.  10) ☐ The drawing(s) filed on 31 December 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	Status	•					
2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.  3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) ☐ Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) ☐ Claim(s) is/are allowed.  6] ☐ Claim(s) is/are rejected.  7) ☐ Claim(s) is/are objected to.  8) ☐ Claim(s) is/are subject to restriction and/or election requirement.  Application Papers  9) ☐ The specification is objected to by the Examiner.  10) ☐ The drawing(s) filed on 31 December 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No.  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	1) Responsive to communication(s) filed on 3 No.	<u>vember 2006</u> .					
Disposition of Claims  4)  Claim(s) 1-30 is/are pending in the application. 4a) Of the above claim(s) is/are withdrawn from consideration.  5)  Claim(s) is/are allowed. 6)  Claim(s) is/are rejected. 7)  Claim(s) is/are objected to. 8)  Claim(s) are subject to restriction and/or election requirement.  Application Papers  9)  The specification is objected to by the Examiner. 10)  The drawing(s) filed on 31 December 2003 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: 1. Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.	2a)⊠ This action is <b>FINAL</b> . 2b)☐ This	This action is <b>FINAL</b> . 2b) ☐ This action is non-final.					
Application of Claims  4) ○ Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) ○ Claim(s) is/are allowed.  6) ○ Claim(s) is/are rejected.  7) ○ Claim(s) is/are objected to.  8) ○ Claim(s) are subject to restriction and/or election requirement.  Application Papers  9) ○ The specification is objected to by the Examiner.  10) ○ The drawing(s) filed on 31 December 2003 is/are: a) ○ accepted or b) ○ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) ○ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) ○ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ○ All b) ○ Some * c) ○ None of:  1. ○ Certified copies of the priority documents have been received.  2. ○ Certified copies of the priority documents have been received in Application No  3. ○ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	3) Since this application is in condition for allowar	3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is					
4) Claim(s) 1-30 is/are pending in the application.  4a) Of the above claim(s) is/are withdrawn from consideration.  5) Claim(s) is/are allowed.  6) Claim(s) 1-30 is/are rejected.  7) Claim(s) is/are objected to.  8) Claim(s) is/are objected to.  8) Claim(s) are subject to restriction and/or election requirement.  Application Papers  9) The specification is objected to by the Examiner.  10) The drawing(s) filed on 31 December 2003 is/are: a) accepted or b) objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	closed in accordance with the practice under E	Ex parte Quayle, 1935 C.D.	11, 453 O.G. 213.				
4a) Of the above claim(s) is/are withdrawn from consideration.  5) □ Claim(s) is/are allowed.  6) ☒ Claim(s) is/are rejected.  7) □ Claim(s) is/are objected to.  8) □ Claim(s) are subject to restriction and/or election requirement.  Application Papers  9) □ The specification is objected to by the Examiner.  10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) □ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) □ All b) □ Some * c) □ None of:  1. □ Certified copies of the priority documents have been received.  2. □ Certified copies of the priority documents have been received in Application No  3. □ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	Disposition of Claims						
4a) Of the above claim(s) is/are withdrawn from consideration.  5) □ Claim(s) is/are allowed.  6) ☒ Claim(s) is/are rejected.  7) □ Claim(s) is/are objected to.  8) □ Claim(s) are subject to restriction and/or election requirement.  Application Papers  9) □ The specification is objected to by the Examiner.  10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) □ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) □ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) □ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) □ All b) □ Some * c) □ None of:  1. □ Certified copies of the priority documents have been received.  2. □ Certified copies of the priority documents have been received in Application No  3. □ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	·						
6) Claim(s) 1-30 is/are rejected.  7) Claim(s) is/are objected to. 8) Claim(s) is/are objected to. 8) Claim(s) is/are objected to restriction and/or election requirement.  Application Papers  9) The specification is objected to by the Examiner.  10) The drawing(s) filed on 31 December 2003 is/are: a) accepted or b) objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.							
7) ☐ Claim(s) is/are objected to. 8) ☐ Claim(s) are subject to restriction and/or election requirement.  Application Papers  9) ☐ The specification is objected to by the Examiner.  10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.							
Application Papers  9) ☐ The specification is objected to by the Examiner.  10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.							
<ul> <li>Application Papers</li> <li>9) ☐ The specification is objected to by the Examiner.</li> <li>10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).</li> <li>11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.</li> <li>Priority under 35 U.S.C. § 119</li> <li>12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No.  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.</li> </ul>	7) Claim(s) is/are objected to.	La etta a a a a de a a a a a a					
9) ☐ The specification is objected to by the Examiner.  10) ☑ The drawing(s) filed on 31 December 2003 is/are: a) ☑ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) ☐ All b) ☐ Some * c) ☐ None of:  1. ☐ Certified copies of the priority documents have been received.  2. ☐ Certified copies of the priority documents have been received in Application No  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	8) Claim(s) are subject to restriction and/or election requirement.						
<ul> <li>10)  The drawing(s) filed on 31 December 2003 is/are: a)  accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).</li> <li>11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.</li> <li>Priority under 35 U.S.C. § 119</li> <li>12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).</li> <li>a) All b) Some * c) None of:</li> <li>1. Certified copies of the priority documents have been received.</li> <li>2. Certified copies of the priority documents have been received in Application No</li> <li>3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> <li>* See the attached detailed Office action for a list of the certified copies not received.</li> </ul>	Application Papers						
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	9) The specification is objected to by the Examine	er.					
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.  Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	10)⊠ The drawing(s) filed on <u>31 December 2003</u> is/are: a)⊠ accepted or b)□ objected to by the Examiner.						
Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
Priority under 35 U.S.C. § 119  12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some * c) None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No.  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).						
12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  a) All b) Some col None of:  1. Certified copies of the priority documents have been received.  2. Certified copies of the priority documents have been received in Application No  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	11) The oath or declaration is objected to by the Examiner. Note the attached Office Action of John F10-152.						
<ul> <li>a) All b) Some * c) None of:</li> <li>1. Certified copies of the priority documents have been received.</li> <li>2. Certified copies of the priority documents have been received in Application No.</li> <li>3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> <li>* See the attached detailed Office action for a list of the certified copies not received.</li> </ul>	Priority under 35 U.S.C. § 119						
<ul> <li>a) All b) Some * c) None of:</li> <li>1. Certified copies of the priority documents have been received.</li> <li>2. Certified copies of the priority documents have been received in Application No.</li> <li>3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> <li>* See the attached detailed Office action for a list of the certified copies not received.</li> </ul>	12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).						
<ul> <li>2. Certified copies of the priority documents have been received in Application No</li> <li>3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> <li>* See the attached detailed Office action for a list of the certified copies not received.</li> </ul>	a) ☐ All b) ☐ Some * c) ☐ None of:						
<ul> <li>3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</li> <li>* See the attached detailed Office action for a list of the certified copies not received.</li> </ul>							
application from the International Bureau (PCT Rule 17.2(a)).  * See the attached detailed Office action for a list of the certified copies not received.	2. Certified copies of the priority documents have been received in Application No.						
* See the attached detailed Office action for a list of the certified copies not received.							
Attachment(s)	See the attached detailed Office action for a list of the certified copies not reserved.						
Attachment(s)	•	•	•				
Attachment(s)							
	Attachment(s)	A) T Intention 9	Summary (PTO-413)				
2) Notice of Praffsperson's Patent Drawing Review (PTO-948)  Paper No(s)/Mail Date.		Paper No(s	s)/Mail Date				
3) Information Disclosure Statement(s) (PTO/SB/08)  Paper No(s)/Mail Date  5) Notice of Informal Patent Application  6) Other:	3) Information Disclosure Statement(s) (PTO/SB/08)	· =	nformal Patent Application				

Page 2

Application/Control Number: 10/751,258

Art Unit: 2186

#### **DETAILED ACTION**

1. Claims 1-30 have been examined as filed 11/03/06.

### Response to Arguments

2. Applicant's arguments dated 11/03/06 with respect to the rejection of claims 1-30 under 35 U.S.C. 112 first paragraph have been considered and are persuasive in view of the corresponding amendment of the claims; and thereby the rejection is withdrawn.

Applicant's remaining arguments dated 11/03/06 with respect to the rejection of claims 1-30 have been considered however are not persuasive. More specifically, as although Mandal et al. may not believe coalescing random previously cached writes is likely to be statistically significant on the average relative to coalescing sequentially received writes; Mandal et al. none the less clearly anticipates such coalescing as evidenced within paragraph [0071] "The cache has little chance to coalesce random writes in instead acts more like a seed-matching buffer" as previously cited below; and thereby claiming the same is not patentably distinguishable.

## Claim Rejections - 35 USC § 103

- 3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 4. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mason, Jr. (6,304,946) in further view of Mandal et al. (US App. 2003/0088713).

Application/Control Number: 10/751,258

Art Unit: 2186

As per independent claims 1, 11 and 21, Mason, Jr. teaches a system and/or method comprising the means by which multiple potentially non-sequentially cached logical disk block write requests may be subsequently coalesced into a single logical disk write request to improve the effective efficiency of a disk storage system, by way of teaching that groups of arbitrarily previously cached block writes may be identified as a candidate for inclusion within an aggregate coalesced write operation by forming and traversing a logical hierarchy of such cached blocks in a manor corresponding to their natural logical sequential ordering (see abstract and figure 4); however as it may be argued that Mason, Jr. does not explicitly teach that such previously non-sequentially cached writes may be written back as a single "larger" write operation not otherwise inherently composed of potentially multiple disk writes; Mandal et al. does teach this (see paragraph [0071] lines 7-9); and thereby considered obvious to one of ordinary skill in the art at the time of the claimed invention.

As per claims 2-10, 12-20 and 22-30, being dependant on claim 1, 11, 21 or correspondingly dependent claim inclusively, the search structure taught Mason, Jr. as reviewed above is further considered to implicitly teach that blocks stored within a cache organized by sets and ways are inherently searched in multiple directions and correspondingly may inherently coalesce blocks being comprised within multiple cache lines into a single write operation, but does not teach explicitly that otherwise taught by Mandal et al., being that cached written disk blocks may be identified with a dirty bit (page 4 column 2 paragraph 54), that multiple disk block cached lines may be flushed in the same operation (page 7 column 2 paragraph 74), and that the cache may be

Page 4

Application/Control Number: 10/751,258

Art Unit: 2186

composed of non-volatile memory (page 1 column 1 paragraph 3). Thereby it is considered obvious to combine that taught by Mason Jr., with that taught by Mandal et al. relevant to the claims, for the benefit of improving the write-back efficiently of a disk cache.

#### Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765. The examiner can normally be reached on Mon-Thu 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PIERRE BATAILLE PRIMARY EXAMINER

4/12/07